end portion of the tube means with the sorbent material for combining with the detector reagent.

REMARKS

In response to the pending Office Action of January 15, 2002, claims 1, 2, 12, and 13 have been amended.

In the pending Office Action, claims 1-27 were provisionally rejected under the judicially created doctrine of double patenting over claims 1-38 of co-pending Application Serial No. 09/296,602. Claims 2 and 12-16 were also rejected under 35 U.S.C. 102 as being clearly anticipated by Tyhak. Further, claims 1, 3-11 and 17-27 were rejected under 35 U.S.C. 103 as being unpatentable over Tyihak. The drawings were objected to as being informal. It is requested that the requirement for new drawings be withheld until a Notice of Allowance has been issued for this case.

With respect to the rejections of claims 1-27, a reconsideration of their rejection is respectfully requested. This is a continuation-in-part of U.S. Patent Application Serial No. 08/763,181, filed December 11, 1996 and issued August 10, 1999 as U.S. Patent No. 5,935,862. Co-pending with this application is U.S. Application Serial No. 09/296,602 filed April 23, 1999. This application, as distinct from the co-pending application, includes concepts where the detector reagent has been pre-deposited on sorbent materials before the analyte is deposited at the spot or place where the detector reagent is located. Even though this is considered distinct, a terminal disclaimer has been submitted referencing the co-pending application.

With reference to the prosecution of U.S. Patent No. 5,935,862, it was pointed out that the invention is not determining the presence of analytes, such as chemical warfare

agents, by thin layer chromatography (TLC) methods. Instead, applicants are using a plate coated with a thin layer of sorbent, chromatographic material that has been marketed for use in performing TLC experiments. The coated plate is used as a solid support for collecting the analyte in a small spot and as a medium for performing a chromatography detection reaction that detects the presence of the analyte at the small spot. The analyte remains in a small spot on a solid support, such as the TLC plate, when a solution of the analyte is applied to the solid support by capillary deposition using tubes with microcapillary sized openings. The analyte is then detected by a chromogenic detector reagent.

In performing thin layer chromatography (TLC) experiments, the analyte is eluted with an eluant (i.e., a solvent or mixtures of solvents), which results in the sample migrating and separating into distinct spots, where the number of spots depends upon the number of analytes/components in the sample. Diffusion occurs as the components migrate up the TLC plate. Therefore, the method of the present invention is not thin layer chromatography (TLC), and can best be described as the opposite of TLC or a non-TLC procedure. This distinction is discussed, for example, in page 3 of the present application. In TLC, components of the analytes separate, but with the present invention components of the analyte do not separate but are concentrated at a small spot where they are deposited on the plate by capillary action. Migration of the analyte on the TLC plate is contrary to optimization of the results of the present invention.

Independent claims 1, 2, 12, and 13 set forth that an analyte solution is withdrawn from tubes by capillary action where the analyte is separated from the solvent and where

the analyte remains in the sorbent material at the place or spot where the end portion of the tube contacts the sorbent material.

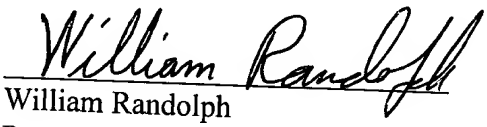
As understood Tyihak discloses a linear overpressurized thin-layer chromatographic apparatus where capillary tubes 6 and 7 are connected to a sorbent layer plate 1. The samples are fed into the apparatus containing the sorbent layer by overpressure applied to the capillary tube, column 4, lines 49-55. Further, the analyte does not appear to remain at the place of deposition, but appears to migrate across the sorbent plate under pressure.

Since all pending claims are considered allowable, this case is considered in condition for allowance.

A one-month extension of the period for response to the rejection of January 15, 2002 has been extended from April 15, 2002 to May 15, 2002 and is being submitted herewith by a separate document.

Any costs incident with the filing of this amendment and the cost of a one month extension should be charged to the U.S. Army Materiel Command Patent Office deposit account number 19-2201. Any deficiency or overpayment should be charged or credited to this numbered deposit account.

May 15, 2002



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VERSION WITH MARKINGS TO SHOW CHANGES MADE
(U.S. Application Serial No. 09/340,165)

In The Specification:(page 1, paragraph 1 (i.e., lines 4-5) is amended as follows:

This is a Continuation-In-Part of U.S. Application Serial No. 08/763,181, filed December 11, 1996 and now U.S. Patent No. 5,935,862. A co-pending application is U.S. Application Serial No. 09/296,602 filed April 23, 1999.

In The Claims:(claims 1, 2, 12 and 13, are amended as follows):

1.(Once Amended) A method of detecting the presence of an analyte, comprising the steps of:

placing a chromogenic or fluorogenic detector reagent for detecting the presence of the analyte on a chromatographic sheet or medium containing sorbent material selected from the group consisting of silica gel, high performance thin layer chromatography (HPTLC) silica gel, polysilicic acid, aluminum oxide, and mixtures of therof;

placing the analyte in a solution where the solvent for the analyte consists of a non-aqueous solvent selected from the group of hexadecane, nonane, cyclohexane, trimethylpentane, petroleum ether, iso-hexanes, hexane, heptane, cyclopentane, trichlorotrifluoroethane, and pentane;

placing the solution containing the analyte in a tube having an end portion with a microcapillary sized opening, so that when the tube is placed in contact with a chromatographic sheet having a surface layer formed of sorbent material, the solution containing the analyte is withdrawn from the end portion of the tube and onto the surface layer of the sorbent material by capillary action;

placing the end portion of the tube having the microcapillary sized opening in contact with the sorbent material at the place where the detector reagent has been deposited on the sorbent material so that the solution containing the analyte is withdrawn from the tube by capillary action, the solvent being absorbed into the sorbent material and the analyte being separated from the solvent, and wherein the analyte remains at the spot of application and wherein the analyte is analyzed at this spot of application [and adsorbed by the sorbent material at the place of contact of the end portion of the tube with the sorbent material].

2. (Once Amended) A method of screening a solution for an analyte that has been dissolved in a solvent to form the solution and for detecting the presence of the analyte when the solution is deposited in a sorbent material so that the analyte is separated from the solvent at the place of application to the sorbent material, comprising the steps of:

placing a detector reagent for detecting the presence of the analyte on the sorbent material;

placing the solution containing the analyte in a tube having an end portion forming a microcapillary sized opening in the end portion of the tube so that when the tube is placed in contact with the sorbent material, the solution containing the analyte in

the tube is withdrawn from the end portion of the tube and into the sorbent material by capillary action;

placing the end portion of the tube forming the microcapillary sized opening in contact with the sorbent material at the location where the detector reagent is placed on the sorbent material, so that the solution is withdrawn from the tube by capillary action, the solvent being absorbed into the sorbent material and the analyte being separated from the solvent and adsorbed by the sorbent material at the spot of application, wherein the analyte remains at the spot of application and is analyzed at this same spot [point of contact of the end portion of the tube with the sorbent material for reacting with the detector reagent].

12. (Once Amended) A kit for screening solutions containing an analyte and for detecting the presence of the analyte when the solutions containing the analyte are deposited in a sorbent material, comprising:

means for obtaining a solution containing the analyte;

tube means for receiving the solution containing the analyte, the tube means having an end portion with a microcapillary sized opening for dispensing the solution containing the analyte by capillary action; and

chromogenic sorbent material having a detector reagent pre-deposited therein for detecting the presence of the analyte, the chromogenic sorbent material receiving the solution containing the analyte from the end portion of the tube means having the microcapillary sized opening as the end portion of the tube means is brought in contact with the sorbent material where the detector reagent has been pre-deposited and the

solution containing the analyte is drawn into the sorbent material by capillary action and with the analyte being concentrated and remaining at the place of contact of the tube means with the sorbent material.

13. (Once Amended) A system for screening solutions containing an analyte and for detecting the presence of the analyte, comprising:

means for obtaining a solution containing the analyte;

tube means for receiving the solution containing the analyte, the tube means having an end portion with a microcapillary sized opening formed therein for dispensing the solution containing the analyte by capillary action;

sorbent material having a detector reagent for detecting the presence of the analyte pre-deposited in the sorbent material, the sorbent material receiving the solution containing the analyte from the tube means as the end portion of the tube means having the microcapillary sized opening is brought in contact with the sorbent material so the solution containing the analyte is deposited on the sorbent material by capillary action where the detector reagent has been pre-deposited and with the analyte being adsorbed by and concentrated in the sorbent material and remaining at the spot [at the place] of contact between the end portion of the tube means with the sorbent material for combining with the detector reagent.